New Play Culture and Playware

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Published in:
Proceedings for BIN2008

Publication date:
2008

Document Version
Accepted author manuscript, peer reviewed version

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Introduction

> Even if we gave children the opportunity to play as they did in the old days, they would hardly feel like it (Jessen, 2005)

In recent years, children's play and culture have changed, and it is possible to understand these changes in the light of a more general *history of modernity.* The characteristics are that younger children and youth's social lives interact less with children of other age groups and that a higher degree of individualization can be detected in the play situations. In the following, we will firstly outline a section of the changing face of play culture and secondly present the concept of "Playware" which is constructed with these changes in mind. In presenting Playware, the article

will also illustrate the points by presenting a prototype of digital playground equipment, iTiles. The main point examined in the article is that children still play, changes or not, but they need inspiration and guidance, and the iTiles is both an example of how an inspiration source could be designed and an illustration of a new branch of play research.

New childhood

The changing face of children's play culture appears repeatedly in numerous contemporary research reports, surveys and books, and the phenomenon is often attributed to the influence of the development of the electronic and digital media. For example, Postmann (1983) assumes that the media have drawn children away from communal play in the streets and Kline (1993) suggests that the media are detrimental to the imagination and children's ability to create their own games. In addition, Lindstrom & Seybold (2003) find that media stifle children's activity – particularly if the way children play today is compared with the games and play environments of previous generations. However, there may be good grounds to ask whether that comparison, which often forms the basis for observations about changes in children's play culture, is either fair or even relevant. Childhood and children's culture are often romanticized (Sutton-Smith, 1997, Corsaro, 1998), and there seems to be a general expectation that the numerous social, cultural and physical changes that the world is undergoing should have little or no effect on childhood. The changes in society, which have a considerable effect on children's lives, do, however, also affect children's play culture in fundamental ways that are also significant to their use of media. The following sections, which will outline these fundamental changes and some of their consequences, are built on research into play culture as expressed for example in Mouritsen (1996, 1998), Corsaro (1998), Sutton-Smith (1997), Jessen (1996, 2001), and Karsten (2003).

Seen from the perspective of play and play culture, the most important change is that large groups of children of all ages, which fifty years ago we would see playing in streets or villages, no longer play the same role in children's lives. In addition, families tend to consist of fewer children, which means that children grow up with fewer siblings with whom to share their everyday lives. In connection, many women today are working outside the home, which means that the number of children staying at home during the day has fallen drastically. The institutions in which children are now spending ever more of their daytime tend to organize children into groups according to age. It is worth noting that pedagogical theories have had an effect on the dissolution of the groups of age-

differentiated children, and in schools, children are put into classes according to their age because this approach is considered most conducive to learning. Sports clubs operate a similar age-group policy. This means that children spend more time with their own age group and less time with children of different ages, and this has a big impact on the play culture. (Sutton-Smith, 1986, Vestergaard 2001, Jessen & Baslev Nielsen, 2005). Also, adult-organized activities like music classes, sport lessons and so on are growing. It means that children are shifting "play domain", so to say, from time to time, and playing outside becomes an adult arranged and controlled affair as opposed to a spontaneous one, an activity performed by a small group of good friends of a similar age, background and school (Karsten, 2003).

Play – a cultural heritage

This new social landscape of childhood affects children's play behaviour strongly. To explain how and why, and to avoid ambiguity, we need to make our stance regarding play and play culture clear. The concept of play as a general idea is difficult to get to grips with, probably because it appears to be described only by the vaguest definitions, and it often changes according to the context in which it is used. Brian Sutton-Smith has described this in his *Ambiguity of Play:* "We all play occasionally, and we all know what playing feels like. However, when it comes to making theoretical statements about what play is, we fall into silliness. There is little agreement among us and much ambiguity" (Sutton-Smith, 1997). In this article, we will refrain from using a general theoretical approach and instead point out three essential aspects of the play activity: 1) while the ability to play may be rooted in the human genes, the games we play are certainly not. You need to have insight into the shared culture of techniques and knowledge of play, called the cultural heritage of play, to participate in play with others, 2) play has its values in itself and not outside itself, 3) play is a social practice, and it is learned, primarily through an imitation of other players.

Emphasizing the aspects above means first and foremost that we regard play as a cultural phenomenon. It means that we dissociate ourselves from psychological theories of play as only a vehicle for learning or play as therapy and compensation. We concur instead with the view on play as a "category of life", which constitutes the foundation of Johan Huizinga's (1938) theory of play and later has informed theorists like Callois and Gadamer. In short, Huizinga regards play as a self-contained and in itself meaningful way of being in life, which we as human beings – regardless of age – strive to achieve. We play to be "in play", which is a specific state of mind - and we all know

what this “feels like”, as Sutton-Smith puts it. As Huizinga points out: “[in] this intensity, this absorption, this power of maddening, lies the essence, the primordial quality of play” (Huizinga 1955, p. 2). To explain why humans are playing this way is quite different from explaining play as a means to an end, be it learning or whatever else one can think of. Huizinga and the theorists who accept his point of view refuse functionalistic theories of play and regard effects of play like learning as pure by-products. Play is an end in itself and in the view of Huizinga it is not necessary or even possible to ask for the functions of play. This does not mean that play cannot lead to learning, for instance, but it means that humans are not playing to achieve learning. The reverse is truer: We, and especially children, learn to be able to play, not least to play with peers.

Accepting the view on play described above and taking it as the point of departure when investigating the play behavior of children in modern society helps us in our ability to understand and explain the changes that are so apparent. Huizinga and the theorists who accept his view are preoccupied with answering the question “what is play?”, but they are to a much lesser degree interested in the question of how we as human beings get to be “in play”. It is a well known fact to all of us that the state of play is not something we achieve without effort. To get in play demands work, and not any kind of work, but work based on suitable knowledge and competences, and often also special tools, which are developed and prepared for exactly the purpose of creating play. While it is possible to use almost everything as play equipment it is striking to think about how many different play equipments history has produced, not to speak of the amount of play equipments we are able to buy today. It seems fair to speculate why humans go through an often time consuming process of work to create play equipments by hand, or, to put it in modern terms, why we use so much of our hard-earned money to buy play equipment and toys of all kinds. Exactly the same question could be asked about children, who put enormous efforts into learning to play games like football or computer games. The answer is obvious when following in Huizinga’s footsteps. As humans we often work for the sake of getting into play. Like any other kind of human behavior play behavior is shaped by culture handed down from generation to generation. In that sense a good game is similar to a tool, because it holds knowledge about how to do a certain task and at the same time make the task easier to accomplish (Jessen, 1999). Games could very well be seen as tools for play. As with other tools, it is important to be aware that the tool in itself does not do the work. Knowledge of practice is necessary too (Lave & Wenger, 2001).

In order to play, children must know and be conscious about the cultural heritage, which contains a way to organize during the play, the aesthetics and the techniques of playing, all of which is handed down from one generation to the next. Because older children are no longer present to the same extent as before in the surroundings of younger children, the traditional "cultural leaders", i.e. the "masters of play" who have spent years refining and developing their play capabilities are more or less gone. They have taken with them much of the inspiration for play, as well as important knowledge about how to organize a game. In that sense we can say that the cultural heritage has been weakened, and this is why it is much less usual for us to find children playing the same games that we played when we were young.

Whatever the causes or reasons may be, the effect that children are spending more and more time with children of their own age constitutes a radical break with cultural and historical norms. As far back in human history as we can trace, older children have played a central role with regard to young children, and large groups of children have always been of appreciable significance for the ability to assimilate the culture in which they are growing up (Sutton-Smith, 1986). In order to play you must know different styles of play, techniques and ways to organize a game, and therefore play is an activity that you are learning as you are playing. That practice is a social pursuit, which means that it does not matter whether you are playing on your own, such as solitaire or piano playing, or playing socially such as in role-play, football or card games. The point is that the playing activity will always be a social activity, because you must have been present at a game in order to play, whether it is done alone or in company. In that way we can say that players will always be connected to other players through the play practice. The insight into the cultural heritage of play, which is given by imitating other players during the play situation, must therefore been seen as the very requirements for play (Mouritsen, 1996).

However, this does not mean that children have stopped playing altogether, or that play culture is no longer passed on from generation to generation. Rather, children are now simply seeking inspiration elsewhere, and it is precisely here that the media appears. The media and toys become important to children because they stimulate the impulse to play. In a way, it could be said that they function as a replacement for the cultural heritage that was previously supplied by other, older children. This means that children today cannot do without toys, media or other equipment when they play – alone or with other children. As already mentioned, children traditionally learned the rules of games and

how to play them through imitation of other, often older, children while participating in the play culture in the street or in the back yard. Because this cultural mechanism of learning has diminished, the rules must nowadays instead be embodied to a much higher degree in the toys and other play equipment or learned from watching media such as television cartoons and music videos. One example is the impact that TV-programmes like the Junior Eurovision Song Contest (Grand Prix) or MPG Nordic has on girls' play culture. Singing and performing in play is in no way a new phenomenon among girls. What is new, however, is the extent to which media like TV, video- and DVD-players are used as vehicles for inspiration and, not least, learning. The hours young girls used to spend watching, studying, and imitating older girls performances on the street or in the back yard are now often spent in front of a TV screen, where dance steps, body movements and song text are rehearsed, over and over.

We are not claiming that young girls in front of the screens are not looking for inspiration and ideas for play from older girls. When examining young girls' play culture over the recent decades it is seems obvious that their preferences for music are highly influenced by teenage culture. In that regard, one could say that nothing has changed. What we are claiming, is that media also play an important and growing role as a medium for the cultural heritage of play.

Digital toys and equipment are yet another example of how the changing play culture absorbs and utilises media and new technology. Here, computer games are surprisingly enough the best example, as they are characterized by the ability to have game rules *materialized* in the software. In contrast to street games and most board games where the player has to know the rules before being able to play, it is possible to learn the rules of computer games whilst playing. It can even be an important part of playing games to figure out the rules, which does not mean that there is no need for other children to learn from, but instead that there is less need for the cultural leaders and play experts, who were an indispensable part of the play culture in the past.

The materialization of game rules in toys and other play equipment like computer games is a suitable answer to the problem that we stressed above about children spending more time in company with same age peers and less with older children, and this is one of the obvious reasons for the success of computer games among children and youth (Jessen, 2001). That is not to say that the media and toys repress traditional games and play culture, but rather that the move to fill in the

gaps and give children inspiration they no longer get or get to a lesser degree than previously from older peers. Media, such as television, and digital toys, such as computer games, are often good play tools in that they inspire children to interact socially and play together.

Children's culture or culture for children

The social and cultural transformation mentioned above has had a decisive influence on the decrease in traditional play activities among children and youths. The idea that we can turn back time and recreate children's play behavior from the past, which we could say is the underlying assumption in most childhood research, is a well-intentioned, but probably unachievable goal. We are resurrecting old games like the ones we used to play through pedagogical efforts – for example the TV channel Nickelodeon's campaign "Let´s just play" and the Danish "Play Patrol", where professional teachers teach youngsters to play traditional street games, which the youngsters then teach younger children. While such ideas deserve both respect and support, and one can hope for more success than other efforts at the revitalization of historical folk culture, a sober analysis must point out that the odds are small. But we want to stress that the presentation of playware in the following sections should not be read as an attempt to prove that technology is in some way a better solution or implies neglecting ideas like the above mentioned. In our approach to play and play culture, we have to make the users our starting point: what are their needs and likes today? The problem with strategies that try to teach the children to play old games is that we as grown-ups do not perceive of the children's way of producing play culture and meanings in their own lives as valuable and acceptable.

Furthermore, one could say that when adults know what is worth playing, they enhance the validity of an existing cultural heritage, and from that perspective, it seems difficult to influence the content of the cultural heritage. Instead, our perspective is trying first and foremost to look upon children as continuous and independent individuals in a social context (Gulloev, 1998, Hammershoej, 1999, James et al., 1998). In addition, when children are seen as "culture producing agents", they are also able to affect the tradition of play culture in their own way. This means that the concept of heritage or tradition must be considered and thought of in a dynamic and susceptible way. The strategy for resurrecting old games also becomes a story of decay instead of a history of something new and exciting. If we invite children to play for example by offering them play equipment using technology, which we know they are attracted to (Jessen, 2001, Jessen & Baslev Nielsen, 2005), the

idea is that they will be active and generate play ideas themselves. As we see it, it is precisely in the meeting between the play possibilities that we can offer and the creative ability of children where the play activity will be generated.

It is also worth remembering that traditions are only maintained if they are practiced as part of everyday life. The motivation of children to be dedicated to specific games is not only a question of the "quality" or concrete attraction of the game, but it also has to do with the social status related to that specific game. For instance, games and play traditions can be deserted from one day to the next if they are considered "childish" by the players.

Playware and iTiles

What we have tried to argue above is that the assumption that the introduction of electronic media and digital technology has changed play culture is not sustainable. The connection between technology and play is far more complicated and involves many other elements, including in particular social and cultural changes affecting childhood. Much of the discussion of children's use of media and technology both in public and in childhood research have focused on technology as a problem (Postman, 1983, Kline, 1993, Palmer, 2007). What we have tried to underline is that children need toys more and need more toys than in the past, which unavoidably has lead to a stronger commercialisation. Whether we find this acceptable or not this is, in our view, the historical conditions of modern play culture. Because this means that play and the capability to play games is no longer to the same extent as in the past given as a cultural heritage there is good reason to focus on a question, which must become critical: what is good play equipment and toys? And, not least, how can they be created for the benefit of children? These are questions that should not be left to the industry of toys and games to answer, but should be the core questions of play research.

The concept of "playware" is our attempt to deliver a possible point of departure for modern play research. Playware is defined as follows: "[the] use of technology to create the kind of leisure activities we normally label play, i.e. intelligent hardware and software that aims at producing play and playful experiences among users and of which e.g. computer games are a sub-genre" (Lund & Jessen 2005, Lund, Klitbo & Jessen 2005). The concept takes as its point of departure the ability to "materialize" rules, which we mentioned above. Computer games, digital toys and play equipment can carry with them rules in a different way than equipment based on analogue technology. A ball

can demonstrate the difference. It is one of the most widespread toys, even though all ball games are based on the very simple physical characteristics of the ball: It can roll, bounce and be thrown through the air. The rest of all the ball games are culture (Jessen 1998), and that is to say that the physical characteristics does not make the ball into e.g. a football. In itself the ball has a lot of possibilities, but it is the game "football" that creates the ball *as* a football.

In playware the analogue physical characteristics are extended with digital characteristics, which can include the rules that normally are embedded in and part of the culture surrounding a game. In that sense playware is an example of so called "embedded technology"[1], which is used to create play in interaction with users. To continue the example above, one should imagine that the rules of a certain ball game is embedded in the ball and in the surroundings, much in the same way as game rules are embedded in computer games, but it is of course hard to envision all the rules of soccer implanted in a football, at least by today's standard of technology. It would not be impossible to think that some of the rules could, and the first small step in that direction will be taken in the near future when the international soccer league will probably accept that sensor technology will decide whether the ball has crossed the goal line[2].

The example of a playware prototype from our own research we will present briefly here is comparable with the imagined ball with embedded ball games. We will claim that the principles are the same and that the example combines modern technology and knowledge about play culture in order to produce playful experiences for its players. The idea behind the products is that the playware will be able to address all the preferences of the users. The playware is called the "iTiles" (see ill. 1), and it contains an arbitrary number of digital tiles in the size of 18x18 cm. In each tile there is an in-built computer and a light diode and a pressure sensor. The tiles are able to communicate and can be built into a large or a small play area. A number of different games have been developed for the tiles, including hop-scotch, but the most simple and also the most popular among children are the game "Colorrace", which is our own invention. The game consists of each participant choosing a random color. When the game begins, five of the tiles will glow alternately with five different colors. The players must each choose their own color and the aim of the

[1] Also known as pervasive computing and ubiquitous technology

[2] After finishing the writing of this article, we have been presented for the new toy, "Cosmic Catch" from Hasbroe, which is a ball game, where both the ball and the players are equipped with sensors. The rules of the game are given as instructions by a loudspeaker inside the ball. Because of the sensors, a small computer, also inside the ball, can register, which players has the ball and maintain the rules

individual player is then to hit a tile in the moment their chosen color is glowing. When the player hits the tile the light will move on to another tile, randomly chosen, which the player then has to find and hit. The goal is to be the first to hit for example 10 tiles that way. (Lund & Jessen, 2005).

The game is easy to learn and of course boring for one player. But it should not be hard to imagine what happens when five children are running around trying to reach the next tile in their color. The main focus for the children moves from interaction with the tiles to interaction with and against each other. In our studies we have seen several strategies used to try to win. For instance, there are the fast players, who are able to move and twist around the other players, and there are the strong players, who use their strength to prevent the other players from reaching their tiles. In short, "Colorrace" produces play, which has a striking resemblance to many well-known physical games.[3]

We do not claim that iTiles and Colorrace is in any way better or even as colorful as soccer and other ball games. iTiles is, however, an example of how technology can be used to create play that resembles the street play from the past. The construction of the iTiles is related to the demographical changes and the changes in the play culture. First of all the tiles work as a memory for the players which means that rules, techniques and ways to organize are built into the tiles. We can say that instead of a cultural handover from generation to generation the cultural heritage is materialized in the construction of the product. In that way, it is less important that the masters of play, i.e. the players who know the expressions of the play and who initiate other players, are disappearing. Because of the way the product has been constructed, the iTiles is now able to serve that function. Another element of the construction, which seems to support play activity regardless of the demographical changes, is the adaptivity, i.e., the digital tiles by means of software and calculation power can read the individual movements of the child and adjust the system accordingly. This can create play sessions where, for instance, small children and adults can play together at more or less the same level. In continuation of this, we can say that the adaptability supports the possibility for children and adults to play together.

Conclusion

[3] It should be mentioned that the main goal with the iTiles is to build equipment that will create physical play in small places indoor or outdoor. The research project, which iTiles was part of, targeted the growing problem of obesity among children.

The research of playware not only signals a combination of technological and cultural research. It also represents a significant and appropriate change in perspective of play research, when taking as its point of departure a fundamental assumption about play which, in the first place, regards it as an independent phenomenon with a value of its own and in the second place recognises the ability of play to attract, involve and create experience for the players. These are well-known, almost self-evident aspects of play, but they are not well-understood or well-defined, neither in a theoretical sense nor in an empirical sense in relation to product design.

Research into play has primarily been conducted by developmental psychologists and by pedagogical research focusing on the effects of play in the form of, for example, learning and development. This focus involves seeing the aim of research as uncovering the utility of play, and consequently the natural starting point for traditional research into play has been the question as to what children and other users are to learn through their use of play products. In this perspective play is basically treated as a substance or a kind of raw material, which can be utilized.

Playware research differs from traditional play research by focusing on the creation of play and playful experiences. There is a need for the development of such a new branch of play research, in which the focus will be on the creation of play. This shift in perspective should not neglect the fact that play has effect in the form of, for example, exercise and learning. It does, however, have clear consequences for the approach that is taken both in research and in relation to product development. In designing products for play, the aim of creating play is now given priority over all other aims. As a result, the research must in the first instance focus on the ability of play equipment and toys to initiate and maintain play and not, for example, on their ability to stimulate learning or physical movement. Effects such as these are significant, but they are by-products which are dependent on the simple fact that the user is, in fact, at play.

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